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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/870,881

05/30/2001

Douglas C. Watson

NIKOP002/PA0 327

8984

22434

7590

11/30/2004

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EXAMINER

JOHNSTON, PHILLIP A

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/870,881	Applicant(s) WATSON ET AL.	
	Examiner Phillip A Johnston	Art Unit 2881	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 August 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8-24 and 28-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-24 and 28-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Detailed Action***

1. This Office Action is submitted in response to RCE / Amendment filed 8-24-2004, wherein claims 1-7 and 25-27 were previously cancelled, and claims 8, 10, 11, 28, and 30 have been amended. Claims 8-24, and 28-32 are pending.

***Claims Rejection – 35 U.S.C. 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 8-24, and 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,635,887 to Kwan, in view of Higuchi, U.S. Patent No. 6,510,755.

Kwan (887) discloses the following;

(a) Wafer table WT is supported on X-beam 11 by X-slider 111, which includes a linear motor acting against magnet track 112 enabling wafer table WT to be displaced linearly along X-beam 11. X-slider 111 is box shaped and surrounds X-beam 11. X-beam 11 itself is a multi-cell hollow beam with at least three longitudinally extending

cells, as recited in claims 8,11,28, and 30. See Column 6, line 65-67, and Column 7, line 1-10;

(b) A mask or reticle stage, as recited in claims 8, 28, and 30. See Column 1, line 49-58; and Column 11, line 21-25;

(c) A linear motor, coil and magnet track, as recited in claims 14-16. See Column 6, line 65-67, and Column 7, line 1-10.

(d) Air bearing pads in contact with hollow beam 11, as recited in claims 8-13,15, 16,18-24,28, and 30. See Column 7, line 49-55; and

(e) X-beam slider 111 is made of ceramic, as recited in claims 17, and 29. See Column 7, line 39-42.

It is inherent in Kwan (887) that the multi-cell hollow beam 11 is utilized in a vacuum chamber, and that the three longitudinally extending cells therein are vacuum chambers, as recited in claims 8,11,28, and 30.

Regarding claims 18-24, 30 and 32, Kwan (887) discloses the claimed invention except for the use of a second and third guide beam, as recited in claims 18-24, 30 and 32. However it would have been obvious to one having ordinary skill in the art at the time the invention was made to use plural guide beams, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Kwan (887) as applied above fails to teach the use of a cantilevered stage, however Higuchi (755) discloses XY stage mechanism comprises a Y slide shaft 2 penetrating through only one side surface of the wall surfaces of a vacuum chamber 1

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for holding a stage base plate in a cantilevered manner, a Y air slide bearing 4 for guiding the Y slide shaft 2, an X air slide plate 5, a first air slide bearing 6 for supporting the X air slide plate 5, a coupling portion 8, and a second X air slide bearing 9 serving as the guide of the coupling portion 8, whereby, in a state where not only the Y slide shaft is floated up but also the X air slide plate and coupling portion are floated up, the XY stage is driven. See Abstract.

Therefore it would have been obvious to one of ordinary skill in the art that the lithography apparatus and method of Kwan (887) can be modified to use the cantilevered stage of Higuchi (755), to provide a stage mechanism for use in a vacuum chamber which employs a non-contact static pressure bearing as a sliding surface thereof to thereby be able not only to increase the speed, acceleration and life of the stage mechanism but also to maintain its high accuracy over a long period of time.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications should be directed to Phillip Johnston whose telephone number is (571) 272-2475. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor John Lee can be reached at (571) 272-2477. The fax phone number for the organization where the application or proceeding is assigned is 703 872 9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PJ

November 18, 2004



JOHN R. LEE  
SUPERVISORY PATENT EXAMINER  
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